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VOL. 22 No. 23 June 9, 1972

Cooperative Economic Insect Report

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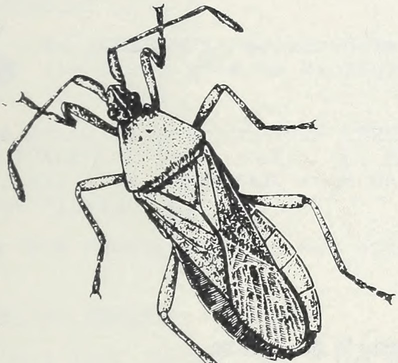

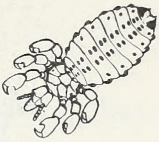

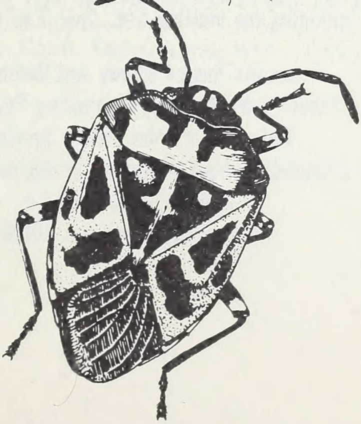

ANIMAL AND PLANT HEALTH SERVICE
PLANT PROTECTION AND QUARANTINE PROGRAMS
ECONOMIC INSECT SURVEY AND DETECTION STAFF

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Service serves as a clearing house and does not assume responsibility for accuracy of the material.

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Volume 22 June 9, 1972 Number 23

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Current Conditions

ARMYWORM potentially serious in southern Illinois; heavy in southeast Missouri. Some high counts on Maryland's Eastern Shore. Some head clipping small grain in Missouri and Tennessee. (p. 329).

GREENBUG increasing on sorghum in southeast Arizona. Some damage to seedling sorghum reported in southeast Nebraska. (pp. 329-330).

ALFALFA WEEVIL larvae heavy on alfalfa in southeast Colorado, central New Mexico, and northwest Arkansas; adults heavy in extreme west-central South Dakota. ALFALFA BLOTCH-MINER heavy in Schoharie County, New York. (pp. 331-332).

BOLL WEEVIL increasing throughout most of Alabama. (p. 333).

SPRING CANKERWORM and FALL CANKERWORM infestations heavy, more severe and widespread than in 1971 in Minnesota. (p. 336).

SCREWWORM cases totaled 2,342 in the United States during this period.

HORN FLY activity increased in Trans-Pecos and north-central areas of Texas, heavy on beef cattle in Mississippi. (pp. 336-337).

Detection

● An ICHNEUMON recovered from larvae of cereal leaf beetle for the first time in Michigan is a new United States record. (p. 337).

New State records include CEREAL LEAF BEETLE in Missouri (p. 337), a CICADELLID from Hawaii (p. 339), a GRYLLACRIDID from Arizona (p. 331), an ICHNEUMON from Ohio, and a PUNCTUREVINE STEM WEEVIL from Florida (p. 337).

For new county records see page 334.

Special Reports

Cereal Leaf Beetle. Selected References 1968-1970. (p. 343).

Distribution of Southern Corn Rootworm. Map. (p. 342).

Reports in this issue are for week ending June 2 unless otherwise indicated.

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WEATHER OF THE WEEK ENDING JUNE 5

Reprinted from Weekly Weather and Crop Bulletin supplied by Environmental Data Service, NOAA.

PRECIPITATION: Showers and thunderstorms occurred from the Great Plains to the Appalachians Monday, May 29, and over most of the eastern third of the Nation on Tuesday and Wednesday. A few isolated showers fell in the arid Southwest. Las Vegas, Nevada received 0.44 inch of rain Tuesday evening. This is the only measurable rain that has fallen in May and is four times the monthly normal. Isolated light showers also fell in the Pacific Northwest early in the week. In general most of the showers were light. Few totals exceeded 1 inch. Most of those fell Monday evening in the middle Mississippi River Valley. A cold front pushed into the northern Great Plains as the weekend approached. It produced summertime thundershowers over the northern and central Great Plains and upper Mississippi River Valley. Isolated thunderstorms also dotted western portions of the Nation from Idaho and Montana to Arizona and New Mexico. A few drops of rain fell at Phoenix, Arizona but not enough to measure. Phoenix still is in its unprecedented stretch of dry weather. Measurable amounts have not fallen at Phoenix in the last 158 days. A thunderstorm at Denver dumped 4-6 inches of hail on parts of the city. Some locally heavy thunderstorms occurred late Sunday along portions of a front that extended from the central Great Plains to the Northeast. Some locally heavy amounts of rain fell in Nebraska, Iowa, and New England. Local showers also soaked spots on the eastern side of the Florida Peninsula. Weather of the week continued on page 341.

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

ARMYWORM (Pseudaletia unipuncta) - ILLINOIS - Potentially very serious on wheat in southern third of State; larvae ranged 3-5 per linear foot in dense, rank fields. Most larvae 1 inch or larger. Heaviest infested fields in area commonly showed 80-100 percent leaf feeding and some head cutting. Numerous reports of migration from wheat to corn and grassy soybeans; counts and degree of damage unknown. Fields in northern half of State generally averaged less than 1 larva per linear foot. (Ill. Ins. Sur.). INDIANA - Reported in winter wheat in 6 southwest counties and Lawrence County in south-central district. Larvae near maturity in southern portions of infested area. (Matthew). MISSOURI - Heavy in wheat and barley in southeast area. Head clipping noted. Larvae light in most grain fields, light to moderate in fescue and orchard grass in southwest areas. (Munson). MARYLAND - Third and fourth instar larvae ranged 1-150 per square yard in late-planted barley in Dorchester County. Averaged less than 2 per square yard in most fields surveyed. Most barley should be harvested within next 14 days. About 10 percent of acreage in Dorchester, Wicomico, and Worcester Counties will be sprayed. No damage to no-till corn yet. (U. Md., Ent. Dept.). VIRGINIA - Larvae severely damaged no-till corn in many areas. Damage tends to be spotty. (Allen). NORTH CAROLINA - Larvae damaged sod-planted corn in Iredell and Surry Counties. Damage ranged up to 30 percent in 3 or 4 fields. Populations heaviest in corn following fescue or rye. Damage to small grain also noted in Camden County field. Larvae moving from small grain to corn in that area. (Franklin et al.). TENNESSEE - Populations decreased. Damage heavy to grains, corn, and pastures in some areas past 2 weeks. Barley most heavily infested grain; many fields totally defoliated and 30 percent of heads clipped. Larvae ranged 1-10 per square foot in infested corn where no controls applied; fields with heavy counts destroyed. Control variable. (Gordon, Bruer).

ASTER LEAFHOPPER (Macrosteles fascifrons) - MINNESOTA - Counts in rye, wheat and oats declined in most southeast district fields. (Minn. Pest Rpt.).

CORN EARWORM (Heliothis zea) - ALABAMA - Larvae damaged 3-5 percent of 2 to 3-foot corn in 15-acre field at Rahoboth, Houston County. Larvae damaged commercial tomatoes over large area of Houston and Geneva Counties. Larvae pupating in Henry County. (Stephenson et al.). MISSISSIPPI - Light in early corn in 5 percent of ears examined. About 100 percent of silks in infested ears contained small larvae or eggs. (Robinson).

CORN LEAF APHID (Rhopalosiphum maidis) - MISSOURI - Infested sorghum throughout southwest and west-central areas. High populations (up to 70 percent of plants infested) in few early planted fields. (Munson). TEXAS - Still light on grain sorghum throughout most north-central counties. Beneficial insects increasing. (Turney).

GREENBUG (Schizaphis graminum) - ARIZONA - Building up on sorghum in Cochise County area; ranged 25-100 per plant. (Ariz. Coop. Sur.). TEXAS - Light on grain sorghum throughout most north-central counties surrounding Denton. (Turney). OKLAHOMA - Ranged 1-13 per plant on 10 percent of young sorghum plants in fields checked in Ottawa and Craig Counties. (Okla. Coop. Sur.). KANSAS -

Flights from wheat to seedling sorghum continued. Damage to sudansorghum heavier than usual. (Gates, Brooks). NEBRASKA - Some damage to seedling sorghum in southeast district. Ranged 1-10 per plant on sorghum 1-3 inches high, with many plants severely discolored. One 40-acre field near Auburn, Nemaha County, totally destroyed (Roselle, Wilson). MISSOURI - Light on seedling sorghum throughout southwest and west-central areas. (Munson).

SPOTTED ALFALFA APHID (Therioaphis maculata) - ARIZONA - Averaged 400 per 100 sweeps of alfalfa in Cochise County. (Ariz. Coop. Sur.).

CORN, SORGHUM, SUGARCANE

EUROPEAN CORN BORER (Ostrinia nubilalis) - KANSAS - First moths of season in Brown County light trap May 22; 5 or 6 days later than in 1971. (Gates, Brooks). MISSOURI - First egg masses of season on corn in west-central and southwestern areas. Moths present on grass and vegetation in surrounding cornfields. (Munson). NEBRASKA - Catches still increasing in light traps at Lincoln and Aurora. First moths taken at Lincoln May 27, at Aurora May 17. Pupation near complete in east, southeast, and central areas. (Berogan, Keith). MINNESOTA - Pupation observed in Dakota and Goodhue Counties. (Minn. Pest Rpt.). MICHIGAN - First adults emerged in Lenawee County about 7 days earlier than usual. (Cress). ILLINOIS - Development ahead of normal in southern half of State which would reduce survival. Moth emergence 30 percent in central section; about 20 percent of borers had not yet pupated. Pupation just started in northern section. (Ill. Sur. Rpt.). INDIANA - Pupation in stalks above ground complete in northernmost counties. Corn in same areas seldom beyond 4-leaf stage. (Meyer). DELAWARE - Egg masses heavy on dock, unchanged on potatoes; common on field and sweet corn; some first-stage larval feeding seen. Hatched masses taken May 30 on field corn show oviposition on this crop in Sussex County began about May 23 and probably May 17-20 when adults common in blacklight traps. (Burbutis, Kelsey).

BLACK CUTWORM (Agrotis ipsilon) - ILLINOIS - Larval damage heavy to field corn in localized areas. Parts of fields replanted in southern half of State. (Ill. Ins. Rpt.). MISSOURI - Damaged corn in southeast, east-central, and central areas. (Thomas).

A NOCTUID MOTH (Euxoa detersa) - NEBRASKA - Larvae destroyed about 35-40 percent of stand in 160-acre cornfield north of Meadow Grove, Pierce County. Controls applied. (Keith, Berogan).

CORN ROOT APHID (Aphis maidiradicis) - KENTUCKY - Infested 82-85 percent of corn plants in no-till fields in Pulaski and Lincoln Counties. Fields previously in fescue and fescue-bluegrass sod respectively. (Barnett, Gregory).

SORGHUM MIDGE (Contarinia sorghicola) - TEXAS - Infested grain sorghum in Falls and Hill Counties. Light in Hill County, 4-6 midges per 10 sweeps in blooming fields. In Falls County, midges averaged 2 per head in one field. Midges reported from Wilson Community, Falls County. (Hoelscher).

SMALL GRAINS

BROWN WHEAT MITE (Petrobia latens) - UTAH - Damage increased in southern dryland wheat areas. (Knowlton). Damaged wheat throughout Cedar Valley, Utah County, (Haws, Dewey); damage to wheat and barley severe in Payson area of county. (Horn, Roberts).

PALE WESTERN CUTWORM (Agrotis orthogonia) - UTAH - Damaged dryland wheat in Cedar Valley, Utah County. (Horne, Roberts).

ENGLISH GRAIN APHID (Macrosiphum avenae) - TENNESSEE - At control levels in some eastern area wheat. Minimum of 30 aphids per head should be present before treating headed grain. (Gordon, Bruer).

HESSIAN FLY (Mayetiola destructor) - TENNESSEE - Pupae heavy in 450 acres of wheat on 2 McMinn County farms. One field planted after November 15, 1971, will not produce more than 10 bushels of grain per acre, 95+ percent of stalks infested. (Gordon, Bruer).

TURF, PASTURES, RANGELAND

WESTERN YELLOWSTRIPED ARMYWORM (Spodoptera praefica) - OREGON - Larvae feeding on variety of herbaceous plants along Snake River in Wallowa County. Also noted on Malheur County rangelands. (Goeden).

A GRYLLACRIDID (Utabaenetes tanneri) - ARIZONA - This camel cricket collected in Coconino County, May 3, 1972, by D. Carver. Determined by A.B. Gurney. This is a new State record. (Ariz. Coop. Sur.).

FORAGE LEGUMES

ALFALFA WEEVIL (Hypera postica) - NEVADA - Larvae 125+ per sweep on alfalfa hay in Quinn River Crossing area and up to 25 per sweep in Denio area, Humboldt County. (Bechtel, Rowe). Ranged 15-25 per sweep in Eureka and Lander Counties. (Lundahl). UTAH - Damage generally light in Washington County. (Huber). H. postica retarding growth in frost-injured fields in Salt Lake County. (Knowlton, Thornley). Cutting of alfalfa underway to reduce damage in some Box Elder County fields. (McAllister). COLORADO - Larvae heavy, ranged 20-35 per 10 sweeps in southeastern areas and 25-30 per 10 sweeps in western areas. Parasites and predators numerous in southeast regions. Larval parasitism by Bathyplectes sp. ranged 20-30 percent in western area. (Colo. Ins. Sur.). NEW MEXICO - Larvae heavy on alfalfa south of Albuquerque, Bernalillo County. Damage light. (Heninger).

OKLAHOMA - H. postica still in alfalfa in some areas; moderate in Cleveland County, light in Roger Mills and Major Counties. (Okla. Coop. Sur.). ARKANSAS - Larvae heavy, 500-600 per 100 sweeps, in Fayetteville area. Pupation ended in northwest area. (Boyer). KANSAS - Declined throughout State, larvae 200 per 10 sweeps in Rice County. (Gates, Brooks). SOUTH DAKOTA - Adults heavy, 529 per 100 sweeps, in Lawrence County alfalfa. Larvae, mostly first and second instars, 394 per 100 sweeps. (Jones).

INDIANA - Leaf loss to alfalfa by H. postica ranged 0-8.5 percent in northern districts. Damage more frequent in South Bend area of northern tier of counties, diminishes outward from that point, especially southward. Little more damage expected; harvesting begun, as alfalfa in northern districts in bud stage. (Meyer). OHIO - H. postica larvae destroyed alfalfa in some areas of Wayne and Medina Counties (Fox); damage 50 percent in Hancock County (Lorn). KENTUCKY - Activity decreased in central area. Larvae caused less than 10 percent foliar loss to alfalfa in Grayson County where larvae averaged 500 per 100 sweeps. Eggs averaged 251 per square foot May 11, 140 per square foot May 18, and 45 per square foot May 25 in Fayette County. (Barnett, Parr). NEW JERSEY - Mines noticeable in Burlington and Middlesex Counties May 22 and 24. (Ins.-Dis. Newsltr.).

BEET ARMYWORM (Spodoptera exigua) - ARIZONA - Larvae per 100 sweeps of alfalfa: 10 at Safford, Graham County; 80 at Mesa and 70 in Gila Valley, Yuma County. (Ariz. Coop. Sur.).

VARIEGATED CUTWORM (Peridroma saucia) - KANSAS - Larvae in some alfalfa in Riley County feeding on stubble and preventing regrowth. Larvae averaged 9-10 per square yard on stems during midday. Additional larvae beneath soil surface. (Gates, Brooks).

ALFALFA BLOTCH-MINER (Agromyza frontella) - NEW YORK - Adults numerous in Hudson Valley. Sample of 10,000 adults (heavy) taken at Middleburg, Schoharie County. Known distribution in State: Fulton, Saratoga, Washington, Montgomery, Schenectady, Rensselaer, Albany, Delaware, Greene, Columbia, Sullivan, Ulster, Dutchess, and Orange Counties. (N.Y. Wkly. Rpt.). PENNSYLVANIA - Adults taken in 7 fields in Northampton and Bucks Counties. (Wheeler, Valley).

ALFALFA SNOUT BEETLE (Brachyrhinus ligustici) - NEW YORK - Adult emergence and migration still heavy in Jefferson County; 40-50 per 10 sweeps. New alfalfa seedings heavily damaged. Egg development has begun, expect oviposition soon. (N.Y. Wkly. Rpt., May 30).

PEA APHID (Acyrthosiphon pisum) - ARIZONA - Counts per 100 sweeps of alfalfa: Light at Safford, Graham County; 60 at Phoenix, Maricopa County; 200 at Mesa and 150 in Gila Valley, Yuma County; 600 in Cochise County. (Ariz. Coop. Sur.). NEBRASKA - Ranged 45-600 per 100 sweeps in 19 alfalfa fields in Washington, Burt, Cuming, Thurston, Dakota, Wayne, Dixon, Cedar, and Pierce Counties. (Keith, Berogan). KENTUCKY - Averaged 500 per 100 sweeps of alfalfa in Grayson County. (Barnett).

LYGUS BUGS (Lygus spp.) - ARIZONA - Counts per 100 sweeps of alfalfa: 450 at Safford, Graham County; 276 at Phoenix, Maricopa County; 190 at Mesa and 540 in Gila Valley, Yuma County; 350 in Cochise County. (Ariz. Coop. Sur.). KENTUCKY - Mostly L. lineolaris (tarnished plant bug), averaged 400 per 100 sweeps in alfalfa in Grayson County. (Barnett).

MEADOW SPITTLEBUG (Philaenus spumarius) - OHIO - Damaging clover and alfalfa in Knox and Geauga Counties. (Fox). KENTUCKY - Adults averaged 750 per 100 sweeps in Grayson County alfalfa. (Barnett).

PEANUTS

TOBACCO THRIPS (Frankliniella fusca) - ALABAMA - This and other thrips caused serious dwarfing and malformation of peanut leaves in the Newville and Tumbleton area of Henry County necessitating treatment. (Trawick).

COTTON

BOLL WEEVIL (Anthonomus grandis) - ALABAMA - Increasing throughout most of State. Ranged 2,000-5,000 per acre along field borders in Henry and Houston Counties; as high as ever recorded. First emergence of 1972 adults expected June 13; will extend 12-20 days. Weevils remain light in Covington, Pike, and Monroe Counties (Gamble), appear heavier on Sand Mountain, Marshall County, (Murphy); no weevils collected in Morgan County. (Rutledge). One weevil collected in Colbert County (Salter), averaged 50 per acre in Madison County (Burton, Stewart). MISSISSIPPI - Leggett trap catches May 22-26 indicate weevils present on cotton in Covington, Lamar, Lawrence, Lincoln, Marion, Jefferson Davis, Pike, Walthall, Panola, and Yalobusha Counties. Weevils found in 3 fields in Attala County. (Swoope). LOUISIANA - In Madison Parish, 1,467 weevils collected in 12 Leggett traps near ground trash collection sites since March 17. (Cleveland et al.). TEXAS - Overwintered weevils detected in Ellis County field. Weevils moving into cotton in central area. (Turney). OKLAHOMA - Trap collections in Jackson County: 22 in Blair area, 13 in the Humphreys area, 6 in Martha area. (Okla. Coop. Sur.).

BOLLWORMS (Heliothis spp.) - MISSISSIPPI - Few first instar larvae on young cotton in Noxubee County. (Robinson). ALABAMA - Eggs heavy in fields at Kinsey, Houston County. (McQueen).

THRIPS (Frankliniella sp.) - TEXAS - Reported damaging untreated cotton in Ellis, Hunt, Rockwall, Denton, Kaufman, Delta, Fannin, and Collin Counties. Thrips decreasing generally throughout central area; however, still damaging newly emerged cotton in Hill and McLennan Counties. Thrips light to heavy on seedling cotton in Pecos and Reeves Counties. Heavy in fields near small grain. Migrating from small grain to cotton as crops mature. (Turney, Hoelscher, Neeb). OKLAHOMA - Averaged 5 per plant on untreated young cotton in Chickasha area, Grady County, and in Caddo and Washita Counties. Moderate to heavy in Harmon County with some fields treated. (Okla. Coop. Sur.).

POTATOES, TOMATOES, PEPPERS

PEPPER WEEVIL (Anthonomus eugenii) - FLORIDA - Larvae up to 3 per fruit on bell peppers in Immokalee area, Collier County; younger peppers most affected. Estimated 20 percent of crop damaged. Crop season nearly at end. (Poe).

BEANS AND PEAS

BEAN LEAF BEETLE (Cerotoma trifurcata) - MISSISSIPPI - Medium to heavy on string beans, lima beans, and cowpeas throughout Oktibbeha County. (Guice).

CARMINE SPIDER MITE (Tetranychus cinnabarinus) - MISSISSIPPI - This species and T. urticae (two-spotted spider mite) heavy on string beans; 100+ mites per square inch in some cases and to lesser extent on lima beans in Oktibbeha County. (Guice).

COLE CROPS

A CABBAGE FLEA BEETLE (Phyllotreta cruciferae) - OREGON - Adults moving into broccoli, cabbage, and cauliflower plantings from adjacent stands of wild radish in Cornelius area, Washington County. Infestations not as yet economic but expected to warrant control in about 2 weeks. One adult per 20 transplants and one per 50 direct seeded plants found May 27. (Collins).

CUCURBITS

SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata howardi) - MISSISSIPPI - Heavy in some gardens in Leake County where cucumbers and other garden vegetables involved. Infestations ranged 1-50 (averaged 15) percent on 30 acres of cucumbers in Monroe County. Light to heavy in 10 acres of cucumbers in Madison County; infested 40 percent of plants in one-acre field of cucumbers in Neshoba County. (Robinson).

GENERAL VEGETABLES

CELERY LOOPER (Anagrapha falcifera) - MICHIGAN - Moth collections increased at all stations, most numerous at Fennville station. (Newman).

DETECTION

New United States Record - AN ICHNEUMON (Lemophagus curtus Townes) - MICHIGAN - Berrien County. (p. 337).

New State Records - CEREAL LEAF BEETLE (Oulema melanopus) - MISSOURI - St. Charles.(p. 337), A CICADELLID (Graphocephala cythura) cythura) - HAWAII - Oahu. (p. 339). A GRYLLACRIDID (Utabaenetes tanneri) - ARIZONA - Coconino County. (p. 331). AN ICHNEUMON (Bathyplectes anura) - OHIO - Warren, Wayne Counties. (p. 337). A PUNCTUREVINE STEM WEEVIL (Microlarinus lypriformis) - FLORIDA - Dade County. (p. 337).

New County Records - CEREAL LEAF BEETLE (Oulema melanopus) - MISSOURI - St. Louis, Jefferson (p. 337); - ILLINOIS - Perry, Randolph, Franklin, Jackson, Hamilton, White, Gallatin, Edwards, Saline, Williamson, Wabash (p. 338). TENNESSEE - Sumner, Rutherford, Jackson, Morgan (p. 338).

DECIDUOUS FRUITS AND NUTS S

EUROPEAN RED MITE (*Panonychus ulmi*) - MICHIGAN - Northern areas report population outbreaks on prunes since May 27 with substantial bronzing of young leaves. Second-generation eggs appearing on apple leaves in southern and eastern areas of State. (Thompson). MASSACHUSETTS - Many adults and eggs seen on apple foliage in Bristol and Norfolk Counties. (Jensen).

ORIENTAL FRUIT MOTH (*Grapholitha molesta*) - INDIANA - Terminals on block of young peach trees about 25 percent infested, Clay County. (Matthew). Heavier than usual in peach trees in Morgan and Johnson Counties. (Favinger). OKLAHOMA - Moderate on peaches and plums in Wagoner County. (Okla. Coop. Sur.). MASSACHUSETTS - Single adult taken in 4 pheromone traps in Hampshire County. (Jensen).

PLUM CURCULIO (*Conotrachelus nenuphar*) - MICHIGAN - Egg-laying scars on cherries in southern areas. (Thompson). MAINE - First adults seen May 26, same date as 1971; only light populations present now. Numbers increased rapidly and "cutting" will begin when fruit reaches one-fourth inch in diameter or larger in Kennebec County. (Wave).

APPLE CURCULIO (*Tachypterellus quadrigibbus*) - MASSACHUSETTS - Adults ovipositing and feeding on young developing Devoe pears in Norfolk County. (Jensen).

PEACHTREE BORER (*Sanninoidea exitiosa*) - TEXAS - Moderate to heavy damage noted on peach trees in Nolan County. (Boring).

FALL WEBWORM (*Hyphantria cunea*) - TEXAS - Medium on pecan trees in Brazoria, Fort Bend, Waller, Grimes, and Brazos Counties; tents ranged 0-10 per tree. (Green).

CITRUS

BEET ARMYWORM (*Spodoptera exigua*) - ARIZONA - Required treatment in citrus seedbed at Yuma, Yuma County. (Ariz. Coop. Sur.).

OTHER TROPICAL AND SUBTROPICAL FRUIT

HEMISPHERICAL SCALE (*Saissetia coffeae*) - CALIFORNIA - Infested sapote trees locally in Arroyo Grande, San Luis Obispo County; 90 per limb. (Cal. Coop. Sur.).

FOREST AND SHADE TREES

EUROPEAN PINE SAWFLY (*Neodiprion sertifer*) - INDIANA - Infestations reported from east-central, northeast, and northwest districts. One observed in northeast district on Scotch pines 3-6 feet tall, caused defoliation ranging from light to 100 percent. Several hundred trees involved. (Schuder, Meyer).

NANTUCKET PINE TIP MOTH (*Rhyacionia frustrana*) - OKLAHOMA - First-generation adults about 50 percent emerged from young pines in Delaware County. (Okla. Coop. Sur.).

SPRING CANKERWORM (*Paleacrita vernata*) - NORTH DAKOTA - Infestations and damage by this pest and *Alsophila pometaria* (fall cankerworm) heavy and widespread in Pembina, Walsh, and Grand Forks Counties. Up to 90 percent of elms in single-row shelterbelts completely defoliated. Larvae averaged one per 2 leaves. *P. vernata* dominant species. (Brandvik). MINNESOTA - Heavy defoliation by *P. vernata* and *A. pometaria* continues in Hennipen and Ramsey Counties. Infestations more severe and widespread than in 1971. (Minn. Pest Rpt.).

ELM LEAF BEETLE (*Pyrrhalta luteola*) - TEXAS - Light to moderate on elms in Winkler, Ward, Reeves, Pecos, Midland, Ector, Upton, Reagan, and Glasscock Counties. Damage moderate to heavy on elms in Wichita, Wilbarger, and Nolan Counties. Damaged untreated elms throughout north-central area. (Neeb et al.). OKLAHOMA - First-generation pupation beginning in Payne County; some very small larvae still present. Few first-generation eggs still present in Major County. Damage light to moderate in most areas. (Okla. Coop. Sur.).

STRAWBERRY SPIDER MITE (*Tetranychus turkestani*) - NEVADA - Heavy, averaged 300 per leaf on mulberry at Las Vegas, Clark County. (Hoff).

MAN AND ANIMALS

SCREWWORM (*Cochliomyia hominivorax*) - Total of 2,342 cases reported in U.S. May 28-June 3 as follows: TEXAS: Aransas 1, Archer 3, Atascosa 82, Bandera 26, Bastrop 4, Bee 71, Bell 1, Bexar 51, Blanco 7, Borden 2, Brewster 6, Brooks 48, Brown 3, Burleson 2, Burnet 2, Caldwell 19, Callahan 3, Cameron 7, Coleman 3, Comal 9, Comanche 3, Concho 2, Cottle 1, Crockett 13, Crosby 1, De Witt 39, Dimmit 75, Duval 53, Eastland 1, Edwards 68, Erath 2, Fayette 1, Frio 69, Garza 1, Gillespie 20, Goliad 78, Gonzales 35, Grimes 2, Guadalupe 7, Hamilton 1, Hays 2, Hidalgo 64, Howard 8, Jack 1, Jackson 1, Jeff Davis 2, Jim Hogg 56, Jim Wells 56, Jones 1, Karnes 24, Kendall 23, Kenedy 48, Kent 1, Kerr 26, Kimble 15, Kinney 58, Kleberg 37, La Salle 67, Lavaca 16, Lee 2, Live Oak 66, Llano 4, Mason 13, Maverick 38, McCulloch 3, McMullen 34, Medina 110, Menard 3, Midland 1, Mitchell 6, Nueces 8, Pecos 7, Presidio 3, Reagan 1, Real 30, Refugio 33, Robertson 6, San Patricio 17, San Saba 2, Schleicher 7, Scurry 1, Shackleford 1, Starr 114, Sterling 3, Stonewall 2, Sutton 15, Taylor 1, Terrell 2, Throckmorton 3, Uvalde 72, Val Verde 63, Victoria 24, Webb 128, Wilbarger 1, Willacy 17, Wilson 72, Young 1, Zapata 36, Zavala 54. ARIZONA: Cochise 3, Maricopa 1, Pima 2, Pinal 2. NEW MEXICO: Eddy 1, Grant 1. Total of 628 laboratory-confirmed cases reported in portion of Barrier Zone in Republic of Mexico as follows: Sonora 126, Chihuahua 54, Coahuila 277, Nuevo Leon 171. Total of 24 cases reported in Mexico south of Barrier Zone. Barrier Zone is area where eradication operation underway to prevent establishment of self-sustaining population in U.S. (Anim. Health).

HORN FLY (*Haematobia irritans*) - UTAH - Moderate on cattle in Washington County. (Huber). NEBRASKA - Ranged 25-300 per head on 10 range herds in Logan, McPherson, Keith, and Lincoln Counties. (Campbell). OKLAHOMA - Counts per head averaged 1,500 on cows, 1,700 on yearlings, 2,500 on bulls in Payne County. Moderate to heavy in most areas of State. (Okla. Coop. Sur.). TEXAS - Increased activity noted across Trans-Pecos area. Flies ranged 300-2,000 per animal. Reported increasing in several north-central counties.

(Neeb, Turney). MISSISSIPPI - Heavy on beef cattle in Monroe County. Some herds averaged 300+ per animal. (Chisholm, Robinson). Counts of 25-200 per head on 1,000 beef cattle in Attala County. (Swoope). MINNESOTA - Averages of 1,000 per animal on dairy heifers and calves in control areas. Counts on bulls heavier but lighter on milking cows. (Minn. Pest Rpt.).

MOSQUITOES - WISCONSIN - Moderate to severe annoyance to livestock and or humans reported in Oconto, Polk, Portage, Sauk, Marinette, Fond du Lac, Grant, Waukesha, Adams, Bayfield, and Juneau Counties. (Wis. Ins. Sur.). MINNESOTA - Populations heavy, particularly in northern areas. Heavy rains May 28-29 with run-off into low areas caused first heavy hatch of *Aedes vexans*. (Minn. Pest Rpt.). UTAH - *Aedes dorsalis* adults light to moderate in Weber County, *Culex tarsalis* larvae appearing, all larval stages of *Culiseta inornata* general. About 4,000 acres treated in May. (Frank). Adults abundant and annoying in Cache County. (Knowlton). Annoyance moderate to severe in portions of Washington County. (Huber). *A. vexans* hatch heavy in Salt Lake and Weber Counties. (Roberts). MISSISSIPPI - *Aedes* spp. breeding in swampy areas along Mississippi River in Issaquena County so heavy controls being considered. Some annoyance to cattle reported. (Miller).

BENEFICIAL INSECTS

A PUNCTUREVINE STEM WEEVIL (*Microlarinus lypriformis*) - FLORIDA - Teneral adult, 2 larvae taken in puncturevine at Miami International Airport, Dade County, February 23, 1972. Collected and determined by C.E. Stegmaier, confirmed by R.E. Warner. This is a new State record. Larvae and pupae also collected March 6 and 26 and April 26 in same area. (Fla. Coop. Sur.).

AN ICHNEUMON (*Lemophagus curtus* Townes) - MICHIGAN - Recovered from larvae of *Oulema melanopus* (cereal leaf beetle) collected May 31, 1972, in Berrien County. Collected and determined by T. Burger and V. Montgomery. *O. melanopus* larvae dissected June 2. This is first recovery of *L. curtus* since first released at this recovery site in 1971, and constitutes a new United States record. All introduced species of cereal leaf beetle parasites now established by the Cereal Leaf Beetle Parasite Rearing Facility at Niles. (PP).

AN ICHNEUMON (*Bathyplectes anurus*) - OHIO - Found in larval samples of *Hypera postica* collected in Warren County May 5, 1972, and Wayne County May 12, 1972. This is a new State record. (Flessel).

LADY BEETLES - ARIZONA - Counts per 100 sweeps of alfalfa: 40 at Safford, Graham County; 32 at Phoenix, Maricopa County; 65 at Mesa and 70 in Gila Valley, Yuma County; 35 in Cochise County. (Ariz. Coop. Sur.). KENTUCKY - Populations in most areas of State increased. Adults ranged 10-20 per 100 sweeps in alfalfa in Grayson and Hardin County (central area). (Barnett).

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

CEREAL LEAF BEETLE (*Oulema melanopus*) - MISSOURI - Live adult collected from oats in St. Charles County May 17, 1972, by S.W. Downing. This is a new State record. Live adult collected from oats in St. Louis County May 24, 1972, by D.E. DeWeese. Live larvae collected in Jefferson County May 24, 1972, by L.R. Hanning. Determined by R.E. White. These are new county records. (PP).

ILLINOIS - Live larvae collected on oats: By T.S. Smith in Perry County May 25, in Randolph County May 22, in Franklin County May 25, and in Jackson County May 25. Live adults on oats: Hamilton County May 25, White County May 24, Gallatin County May 26, Edwards County May 24, and Saline County May 25 by J.E. Schafer; Williamson County May 26 by R.W. Elmore, and Wabash County May 24 by J.E. Schafer and C. Koenig. These are new county records for 1972. TENNESSEE - Live larvae collected on oats May 23, 1972, by J. Gordon in Sumner County; May 25, 1972, by G.M. Stamey in Rutherford County, and May 23, 1972, by G.M. Stamey and Morgan in Jackson County; on wheat May 24, 1972, by Morgan and G.M. Stamey in Overton County. These are new county records. All determined by R.E. White. (PP). KENTUCKY - Damage to spring oats in Bracken County noted May 26. (Barnett, Scheibner). OHIO - Extensive damage to oats in boot to joint stages in southeastern areas. Larvae 3-5 per stem infested 95-100 percent of plants in several plots, giving them a white, frosted appearance. Infestation noted on barley and winter wheat in same area. (Bolomgreu). PENNSYLVANIA - Light larval infestation in Greene County wheat. Larvae and adults taken in Butler County oatfield, adults 20-25 per 50 sweeps. (Mallis, Lilley, May 26).

GRASSHOPPERS - MINNESOTA - Egg hatch and rapid nymphal development observed in widely scattered locations. Sugar beets damaged in Kittson County. Some spraying in that area. First and second instar Melanoplus bivittatus, M. packardii, and M. sanguinipes nymphs light in alfalfa in Dakota and Goodhue Counties. (Minn. Pest Rpt.). NORTH DAKOTA - Grasshopper nymphs ranged up to 30 per square yard in field margins in Bowesmont area, Pembina County. Migrated into small grains; damage light. M. bivittatus dominant, still hatching. Some controls applied. (Brandvik).

OKLAHOMA - Nymphal surveys during May showed economic populations developing in several areas. Ranged 6-25 per square yard on 30,000 acres in Arbuckle region of Carter and Murray Counties. Species included M. bivittatus, M. occidentalis, M. packardii, M. differentialis, Hesperotettix speciosus, and Boopedon nubilum. In Caddo, Comanche, and Kiowa Counties, up to 30 per square yard found in favorable habitats on rangeland. Ageneotettix deorum, Phlibostroma quadrimaculatum, M. occidentalis, M. packardii, B. nubilum, Aulocara elliotti, and H. speciosus dominant. In Beaver and Ellis Counties, up to 25 per square yard found in short grass and weedy range areas. Species include Ageneotettix deorum, P. quadrimaculatum, Aulocara elliotti, Drepanopterna femoratum, Amphitornus coloradus, and several bandedwing species. Other counts: 10-20 per square yard on rangeland in Jackson County, moderate to heavy on rangeland in Roger Mills County, heavy in home gardens in Major County. (Okla. Coop. Sur.). OREGON - Melanoplus spp., Camnula pellucida, and Oedaleonotus enigma hatch sporadic. Nymphs ranged 20-50 per square yard in Grant County. Up to 40 in Baker County, and 2-30 in Malheur County. (Goeden et al.).

MORMON CRICKET (Anabrus simplex) - OREGON - Next to last instar nymphs 2-3 per square yard in Wallowa County. (Goeden).

JAPANESE BEETLE (Popillia japonica) - NORTH CAROLINA - First adults of season observed May 28 near Elizabethtown, Bladen County. (Kornegay). SOUTH CAROLINA - Adults averaged 3 per plant on roses in Lexington County. Damage light at present. (King, May 22).

HAWAII INSECT REPORT

New State Record - Six adults of a CICADELLID (*Graphocephala cythura*) collected from mountain apple (*Eugenia malaccensis*) terminals at Moanalua, Oahu, February 15, 1972, by E.S. Shiroma. Also noted on eggplant, squash, beans, and shrubbery. Specimens also swept from weedy areas at Hickam Air Force Base, Oahu, March 29, 1972, by F. Madinger and S. Ochikubo. *G. cythura* recorded from California and Arizona. Determined by J.P. Kramer. (Shiroma).

General Vegetables - CORN EARWORM (*Heliothis zea*) heavy in two acres of mature sweet corn at Waimanalo, Oahu; approximately 90 percent of ears with one or more early instars. Infestation confined to silks and tips of ears. TUMID SPIDER MITE (*Tetranychus tumidus*) heavy in isolated spots of field where sprinkler irrigation coverage inadequate. ONION THRIPS (*Thrips tabaci*) light in 5 acres of bulb onions at Hoolehua, Molokai; 2-5 nymphs and/or adults under sheaths of terminal growth. CABBAGE WEBWORM (*Hellula rogatalis*) infested 35 percent of terminals in one acre of young broccoli seedlings; DIAMONDBACK MOTH (*Plutella xylostella*) larvae light, approximately 25 percent of leaves with one or two larvae or pupae. CHINESE ROSE BEETLE (*Adoretus sinicus*) feeding damage moderate on 85 percent of leaves in this planting and in adjacent 3 acres of bush beans. (Kawamura).

Fruits and Nuts - Heavy colonies of BARNACLE SCALE (*Ceroplastes cirripediformis*) on twigs (all stages) and leaves (mostly nymphs) on 9 of 12 fiddlewood (*Citharexylum spinosum*) trees at Hawaii Kai, Oahu; negligible on remaining trees. Approximately 45 percent of adult scales with parasite emergence holes. Infested material retained for parasite emergence study.(Kawamura).

General Pests - Ten adults and 9 nymphs of SOUTHERN GREEN STINK BUG (*Nezara viridula*) noted in yard planting of long bean at Ewa, Oahu. Five adults and one nymph bore eggs of a TACHINA FLY (*Trichopoda pennipes*). Single stink bug egg mass (97 eggs) 100 percent parasitized by a SCELIONID WASP (*Trissolcus basalis*). *N. viridula* nymphs light in yard planting of *Dendrobium* orchids at Aina Haina, Oahu; approximately 50 percent of floral spikes showed feeding damage. (Kumashiro et al.).

Beneficial Insects - Field examination of Indian rhododendron (*Melastoma malabathricum*) in various areas on Hawaii during April showed 35 percent infestation of terminals (100 terminal samples per area) by larvae of MELASTOMA BORER (*Selca brunella*). On Kauai, fruit infestation averaged 43 percent at Hanahanapuhi and 17 percent at Knudsen Gap. (Yoshioka, Sugawa).

LIGHT TRAP COLLECTIONS

	Tempera-ture °F.	Precip-itation (inches)	BL = blacklight I = incandescent MV = mercury vapor O = other Type of trap	Agrotis ipsilon (black cutworm)	Estigmene acrea (saltmarsh caterpillar)	Euxoa auxiliaris (army cutworm)	Faronta diffusa (wheat head armyworm)	Feltia subterranea (granulate cutworm)	Heliothis virescens (tobacco budworm)	H. zea (bollworm, corn earworm, tomato fruitworm)	Laspeyresia pomonella (codling moth)	Loxostege commixtalis (alfalfa webworm)	Loxostege rantalis (garden webworm)	Loxostege sticticalis (beet webworm)	Manduca quinquemaculata (tomato hornworm)	Manduca sexta (tobacco hornworm)	Ostrinia nubilalis (European corn borer)	Peridroma saucia (variegated cutworm)	Pseudaletia unipuncta (armyworm)	Spodoptera exigua (beet armyworm)	Spodoptera frugiperda (fall armyworm)	Spodoptera ornithogalli (yellowstriped armyworm)	Trichoplusia ni (cabbage looper)	Crops
FLORIDA																								
Gainesville 5/26-6/1			BL		3			1	1							1								
KENTUCKY																								
Lexington 5/26-6/1			BL																1					
MISSISSIPPI																								
Oktibbela 5/26-6/1			BL	2														11	7			12		
Sharkey 5/26-6/1			BL		3			2										9	25			6		
Stoneville 5/26-6/1	0.10	54-92	2BL	6	2			7	1	36								208	89			31		
MISSOURI																								
Portageville 5/26-6/1			BL	9				1		1							7	20	106			11		
NEBRASKA																								
Aurora 5/19-25			BL	70		130	5			1					1			56	179		12	5		
Concord 5/19-25			BL	1			16											2	47					
NEW HAMPSHIRE																								
Lee 5/22-30			BL																1					
OHIO																								
Reynoldsburg 5/26-30			BL																5					
Wooster 5/26-30			BL	6															43					
OREGON																								
Jefferson 5/24-29			BL															3						
Troutdale 5/24-29			BL															1						
PENNSYLVANIA (Districts)																								
Central 5/23-30			BL														2							
Southeast 5/23-30			BL	1	2														7					
Southwest 5/23-30			BL	4	1														19					
TENNESSEE (Counties)																								
Dyer 5/29-6/2			BL	8				4								1		54	352			7	3	
Franklin 5/29-6/2			BL	15	1											1	30		69			15	3	
Madison 5/29-6/2			BL	11				8		2							4	16	136			13	2	
TEXAS																								
Waco 5/26-6/1			BL	52	1			44										2	3	8		41	3	

LIGHT TRAP COLLECTIONS

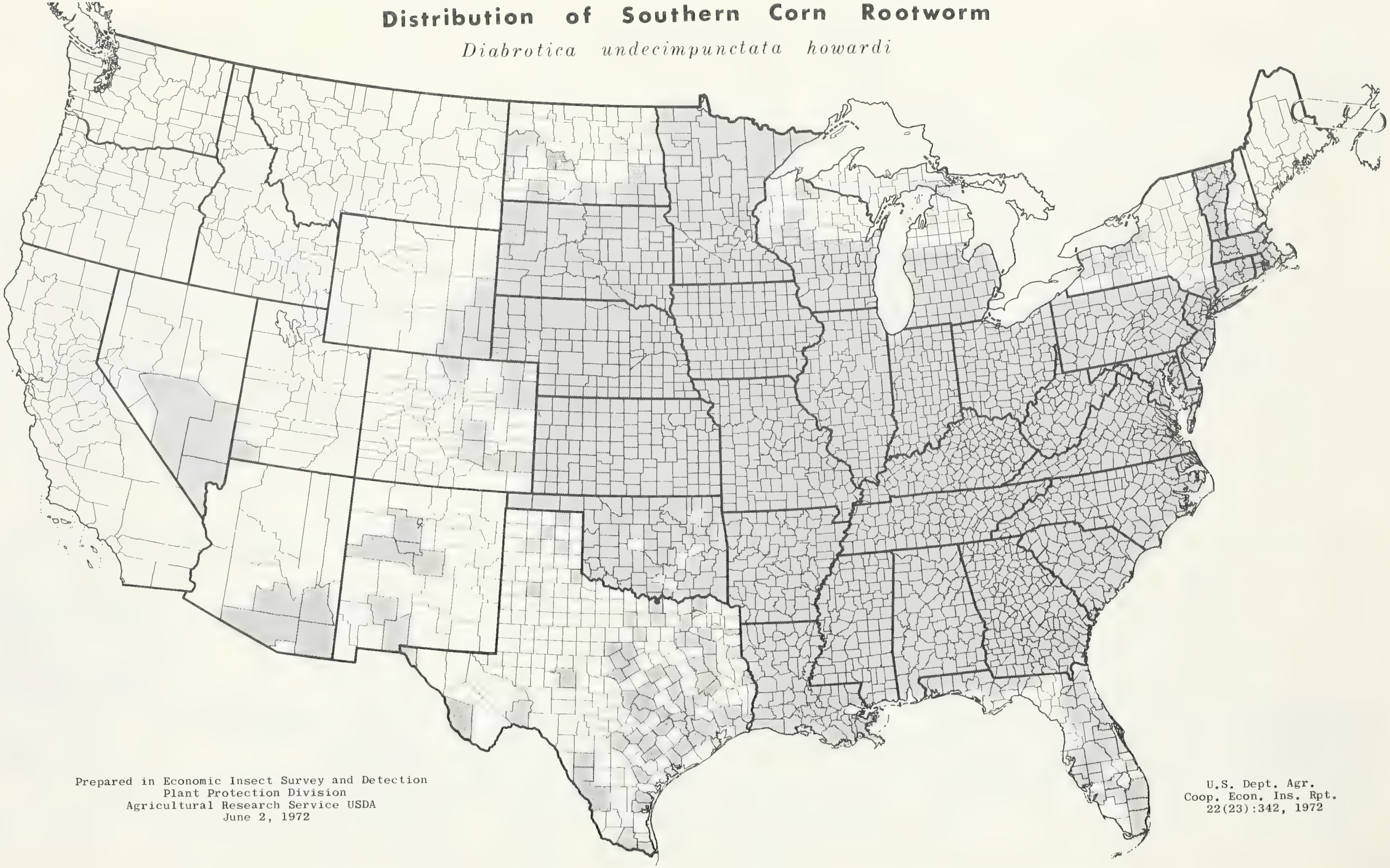
	Temperature °F.	Precipitation (inches)	Type of trap BL = blacklight I = incandescent MV = mercury vapor O = other	Agrotis ipsilon (black cutworm)	Estigmene acrea (saltmarsh caterpillar)	Euxoa auxiliaris (army cutworm)	Faronta diffusa (wheat head armyworm)	Feltia subterranea (granulate cutworm)	Heliothis virescens (tobacco budworm)	H. zea (bollworm, corn earworm, tomato fruitworm)	Laspeyresia pomonella (codling moth)	Loxostege commixtalis (alfalfa webworm)	Loxostege rantalis (garden webworm)	Loxostege sticticalis (beet webworm)	Manduca quinquemaculata (tomato hornworm)	Manduca sexta (tobacco hornworm)	Ostrinia nubilalis (European corn borer)	Peridroma saucia (variegated cutworm)	Pseudaletia unipuncta (armyworm)	Spodoptera exigua (beet armyworm)	Spodoptera frugiperda (fall armyworm)	Spodoptera ornithogalli (yellowstriped armyworm)	Trichoplusia ni (cabbage looper)	Crops
VIRGINIA																								
Montgomery 5/25-31			BL																14					
Warsaw 5/23-30			BL																12					
WISCONSIN																								
Lancaster 5/22-29			BL	1														3	35					
Mazomanie 5/22-30			BL	1													11	2	8					

Weather of the week continued from page 328.

TEMPERATURE: A major change in weather occurred over the northern Great Plains early in the week when a strong arctic high pushed into the area from Canada. Strong winds accompanied cold air. Winds reached gale speeds over the Great Lakes. Afternoon temperatures in Wisconsin were mostly in the 50's but Chicago, Illinois warmed only to 47 degrees Tuesday afternoon. The Far Southwest continued hot with desert locations registering 100 degrees or higher. Needles and Blythe, California recorded 102 degrees Monday afternoon. Rapid warming occurred in the Pacific Northwest. Yakima, Washington registered 95 degrees Monday and Havre, Montana recorded 94 degrees Wednesday. The Cascades became very warm. Stamped Pass, high in the Cascades in Washington, warmed to 71 degrees Monday afternoon with 68 inches of snow on the ground. Chilly weather over the northern Great Plains spread eastward and southward and by Wednesday had reached the Ohio River Valley. The weekend brought rapid warmup. Afternoon temperatures reached the 90's over the central and southern Great Plains and high 80's over much of the East as far north as Maryland and Virginia. The Far Southwest became hotter than it had been earlier in the week. Blythe, California registered 105 degrees Friday and Saturday and 106 degrees Sunday. Moline, Illinois recorded 98 degrees Saturday and Charlottesville, Virginia registered 88 degrees Sunday. Temperatures averaged above normal north of the line from Tucson, Arizona to Lake Erie and in New York and New England. Below normal temperature averages occurred over the southern Great Plains and eastward to the middle and southern Atlantic Coast. Parts of the Great Basin averaged 10 to 14 degrees warmer than normal.

Distribution of Southern Corn Rootworm

Diabrotica undecimpunctata howardi



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Coop. Econ. Ins. Rpt.
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CEREAL LEAF BEETLE
Oulema melanopus L.

Selected References
1968-1970

Additional copies of this bibliography are available from Economic Insect Survey and Detection.

Anderson, R. C. 1968. The biology and ecology of Anaphes flavipes (Foerster) (Hymenoptera:Mymaridae), an exotic egg parasite of the cereal leaf beetle (Coleoptera:Chrysomelidae). Purdue Univ. Ph.D. Thesis. 148 pp.
Hypera postica

Anderson, R. C. and Paschke, J. D. 1968. The biology and ecology of Anaphes flavipes (Hymenoptera: Mymaridae), an exotic egg parasite of the cereal leaf beetle. Ent. Soc. Amer. Ann. 61(1):1-5.

Barton, L. C. and Stehr, F. W. 1970. Normal development of Anaphes flavipes in cereal leaf beetle eggs killed with X-radiation, and potential field use. J. Econ. Ent. 63(1):128-130.

Brennan, P. A. 1968. Effects of different types of radiation on various life stages of cereal leaf beetle, Oulema melanopus (Linnaeus). Diss. Abstr., Sect. B, 28(12, pt.1):5061B.

Carey, W. E. 1968. Effects of x-ray radiation on survival of the cereal leaf beetle, Oulema melanopus (L.). Diss. Abstr. Sect. B, 29(5):1875B.

Connin, R. V., Cobb, D. L., Arnsman, J. C., and Lawson, G. 1968. Mass rearing of the cereal leaf beetle. U.S. Agr. Res. Serv. ARS-33-125. 11 pp.
Oulema melanopus

Connin, R. V. and Jantz, O. K. 1969. Some effects of photoperiod and cold storage on oviposition of the cereal leaf beetle, Oulema melanopus (Coleoptera: Chrysomelidae). Mich. Ent. 1(10):363-366.

Hahn, S. K. 1968. Resistance of barley (Hordeum vulgare L. Emend. Lam.) to cereal leaf beetle (Oulema melanopus L.). Crop Sci. 8(4):461-464.

Helgesen, R. G. and Haynes, D. L. 1969. The rotary flight trap in insect sampling. Ent. Soc. Amer. N. Cent. Br. Proc. 24(1): 20-21.

Lamb, N. J. and Monroe, R. E. 1968. Lipid synthesis from acetate-1-C^{14} by the cereal leaf beetle, Oulema melanopus. Ent. Soc. Amer. Ann. 61(5):1164-1166.

Lamb, N. J. and Monroe, R. E. 1968. Studies of complex lipids synthesized from acetate-1-C^{14} by the cereal leaf beetle, Oulema melanopus. Ent. Soc. Amer. Ann. 61(5):1167-1169.

Lyon, W. F. and Ray, D. A. 1969. Cereal leaf beetle infestation on 20 varieties of drill-seeded spring oats in Franklin County, Columbus, Ohio, 1968. Ent. Soc. Amer. N. Cent. Br. Proc. 24(1):21-22.

Lyon, W. F. and Treece, R. E. 1968. The cereal leaf beetle in Ohio. Ohio State Univ. Ext. Leaf. L-150. 4 pp., Map.
Oulema melanopus

Maltby, H. L., Burger, T. L., Moorehead, G. E., and Montgomery, V. E. 1969. A new record of a *Trichogramma* species parasitizing the cereal leaf beetle. J. Econ. Ent. 62(5):1157-1158.

Manson, G. F. and Boyce, H. R. 1968. Watch for the cereal leaf beetle. Canad. Dept. Agr. Pub. 1353. 4 pp.
Oulema melanopus

McClanahan, R. J., Boyce, H. R., and Code, W. R. 1968. The cereal leaf beetle - A new insect in Ontario. Ent. Soc. Ontario Proc. 98:21-26.

Merino, M. G. 1969. Observations on the sexual behaviour of the cereal-leaf beetle, *Oulema melanopus*. Turrialba 19(3):355-358. In Sp., Engl. Sum.

Merritt, D. L. and Apple, J. W. 1969. Yield reduction of oats caused by the cereal leaf beetle. J. Econ. Ent. 62(2):298-301.

Michigan State University and U.S. Department of Agriculture. 1970. Cereal leaf beetle research 1962-1969. Mich. Agr. Expt. Sta. Res. Rpt. 113. 20 pp.
Oulema melanopus

Moorehead, G. E. and Maltby, H. L. 1970. A container for releasing *Anaphes flavipes* from parasitized eggs of *Oulema melanopus*. J. Econ. Ent. 63(2):675-676.

Myser, W. C. and Carey, W. E. 1969. X-ray radiation effects on survival and sterility of adults of the cereal leaf beetle. J. Econ. Ent. 62(3):543-550.

Ninan, T., Smith, D. H., Jr., and Wellso, S. G. 1968. Chromosomes of the cereal leaf beetle. J. Hered. 59(6):360-362.

Oman, P. 1968. Prevention, surveillance and management of invading pest insects. Bul. Ent. Soc. Amer. 14(2):98-102.

Ringlund, K. and Everson, E. H. 1968. Leaf pubescence in common wheat, *Triticum aestivum* L., and resistance to the cereal leaf beetle, *Oulema melanopus* (L.). Crop Sci. 8(6):705-710.

Ruppel, R. F. 1969. Influence of the quantity of insecticide per seed and per hectare on seed treatments for cereal leaf beetle larvae control on oats. J. Econ. Ent. 62(2):508-509.

Ruppel, R. F. and Gomulinski, M. S. 1968. Insecticide foliage sprays for cereal leaf beetle control. Mich. Agr. Expt. Sta. Quart. Bul. 50(4):431-439.

Ruppel, R. F. and Gomulinski, M. S. 1969. Timing insecticide sprays for cereal leaf beetle control. Ent. Soc. Amer. N. Cent. Br. Proc. 24(2):108-111.

Schillinger, J. A. 1969. Three laboratory techniques for screening small grains for resistance to the cereal leaf beetle. J. Econ. Ent. 62(2):360-363.

Schillinger, J. A., Jr., and Gallun, R. L. 1968. Leaf pubescence of wheat as a deterrent to the cereal leaf beetle, Oulema melanopus. Ent. Soc. Amer. Ann. 61(4):900-903.

Shade, R. E., Hansen, H. L., and Wilson, M. C. 1970. A partial life table of the cereal leaf beetle, Oulema melanopus, in northern Indiana. Ent. Soc. Amer. Ann. 63(1):52-59.

Shade, R. E. and Wilson, M. C. 1968. The impact of summer emerged cereal leaf beetle adults on corn. Ent. Soc. Amer. N. Cent. Br. Proc. 23(1):70.

Shade, R. E. and Wilson, M. C. 1969. Oviposition of the cereal leaf beetle. Ent. Soc. Amer. N. Cent. Br. Proc. 24(1):22.

Stehr, F. W. 1970. Establishment in the United States of Tetrastichus julis, a larval parasite of the cereal leaf beetle. J. Econ. Ent. 63(6):1968-1969.

Treece, R. E. 1968. Damage to winter wheat by the cereal leaf beetle. Ent. Soc. Amer. N. Cent. Br. Proc. 23(1):71.

Treece, R. E. 1969. Cereal leaf beetle, time bomb in the grain field. Crops Soils 22(2):10-11.

Treece, R. E. 1970. Worried about cereal leaf beetle? Hoards Dairyman 115(9):534.
Oulema melanopus

U.S. Department of Agriculture, Agricultural Research Service, Plant Pest Control Division. 1968. Watch for the cereal leaf beetle. USDA PA-550, slightly rev. 4 pp.
Oulema melanopus

Wellso, S. G. 1968. Rearing the cereal leaf beetle on an artificial diet. Ent. Soc. Amer. N. Cent. Br. Proc. 23(1):71.

Wellso, S. G. and Hoxie, R. P. 1969. Hyalomyodes triangulifer parasitizing the cereal leaf beetle, Oulema melanopus. Ent. Soc. Amer. Ann. 62(4):923-924.

Wellso, S. G., Webster, J. A. and Ruppel, R. F. 1970. A selected bibliography of the cereal leaf beetle, Oulema melanopus (Coleoptera: Chrysomelidae). Ent. Soc. Amer. Bul. 16(2):85-88.

Wilson, M. C. and Coauthors. 1969. Impact of cereal leaf beetle larvae on yields of oats. J. Econ. Ent. 62(3):699-702.

Wilson, M. C., Treece, R. E., and Shade, R. E. 1969. 1968 cereal leaf beetle infestation and oats crop loss survey. USDA Plant Pest Control Div. Coop. Econ. Insect Rpt. 19(23):409-417.

Yun, Y. M. 1968. Effects of some physical and biological factors on the reproduction, development, survival, and behavior of the cereal leaf beetle, Oulema melanopus (Linnaeus). Diss. Abstr. Sect. B, 28(12, pt.1):5068B.

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